

## REMARKS

Claim 50 has been amended. Claims 27-51 and 54 remain for further consideration. No new matter has been added.

The objections and rejections shall be taken up in the order presented in the Official Action.

8. Claims 27-29, 31-37, 41-44, 46, 49-51 and 54 currently stand rejected for allegedly being anticipated by U.S. Published Application 2001/000148 to Kurane (hereinafter "Kurane").

### Claim 27

Claim 27 recites a method for determining a number of receptors on a carrier. The method includes the steps of:

- "preparing a carrier;
- immobilizing at least one receptor on the carrier, where the at least one receptor interacts with a ligand to form a receptor-ligand complex;
- after immobilization of the at least one receptor on the carrier, bringing a marker in contact with the receptor to form a receptor-marker complex with separable binding between the receptor and the marker; and
- determining the number of the receptors on the carrier by detecting the receptor-marker complexes;
- where the receptor-marker complexes are detected independently of the receptor-ligand complexes." (cl. 1).

The Official Action contends that "[t]hough the preferred embodiment of Kurane et al is to label the probe before immobilization, Kurane et al does teach a method of labeling after immobilization. Kurane et al teaches a nucleic acid probe not modified with florescent dye is bound or fixed (e.g. immobilized) onto a surface of a solid support (e.g. a carrier). Kurane teaches that before hybridization to the target nucleic acid (e.g. the ligand) is labeled with a fluorescent dye (e.g. label) (p. 8 paragraph 168). Therefore, Kurane et al teaches the limitation

*of adding the marker to the receptor after immobilization of the receptor on to the carrier."* (Official Action, pg. 6). It is respectfully submitted that the claimed invention as a whole is not being considered for the purposes of patentability.

Claim 27 recites the feature of "*after immobilization of the at least one receptor on the carrier, bringing a marker in contact with the receptor to form a receptor-marker complex with separable binding between the receptor and the marker*". (emphasis added, cl. 27). Kurane neither discloses nor even suggests such a feature. In contrast, Kurane merely discloses a fluorescent dye as a marker which does not build a chemical complex with the marker, but rather links covalently to the receptor (atomic bond). In Kurane, through this covalent bond the receptor is transformed chemically, and specificity of the receptor of the ligand diminishes. In contrast, claim 27 recites the feature that the receptor-marker complex is formed with separable binding between the receptor and the marker. A 35 U.S.C. §102 rejection requires a single prior art reference that discloses each feature of the claimed invention. It is respectfully submitted the Kurane is incapable of anticipating claim 27 since the prior art reference fails to disclose the feature of "*a receptor-marker complex with separable binding between the receptor and the marker*". (cl 27).

#### **Claim 49**

Claim 49 is directed to a method for determining a number of receptors. The method includes the feature of "*after immobilization of the at least one receptor on the carrier, bringing a marker in contact with the receptor to form a receptor-marker complex with separable binding between the receptor and the marker*". (cl 49). As set forth above with respect to claim 27, Kurane merely discloses a fluorescent dye as a marker which does not build a chemical complex

with the marker, but rather links covalently to the receptor (atomic bond). In Kurane, through this covalent bond the receptor is transformed chemically, and specificity of the receptor of the ligand diminishes. As a result, Kurane is incapable of anticipating claim 49 since the reference fails to disclose the feature of “*a receptor-marker complex with separable binding between the receptor and the marker*”. (cl 49).

### **Claim 50**

Claim 50 is direct to a method for determining a number of receptors on a carrier. As amended, the method includes the feature of “*after the immobilizing step, bringing a marker in contact with the receptor to form a receptor-marker complex with separable binding between the receptor and the marker*”. (emphasis added, cl. 50). As set forth above with respect to claims 27 and 49, Kurane does not disclose such a feature. As result, it is respectfully submitted that Kurane is also incapable of anticipating the method of claim 50.

9. Claims 33 and 40 currently stands rejected for allegedly being anticipated by Kurane “*...as evidence by Cremer et al (U.S. Patent 5,922,543 July 13, 1999).*”

It is respectfully submitted that the rejection of this claim is moot, since claims 33 and 40 depend indirectly from claim 27, which is patentable for at least the reasons set forth above.

**10-11.** Claim 30 currently stands rejected for allegedly being obvious in view of the combined subject matter disclosed in Kurane and U.S. Patent 6,051,380 to Sosnowski (hereinafter "Sosnowski").

It is respectfully submitted that the rejection of this claim is moot, since claim 30 depends directly from claim 27, which is patentable for at least the reasons set forth above.

**12.** Claims 38-39 currently stand rejected for allegedly being obvious in view of the combined subject matter disclosed in Kurane and U.S. Patent 6,245,506 to Laugharn (hereinafter "Laugharn").

It is respectfully submitted that the rejection of these claims is moot, since each of claims 38-39 depends directly or indirectly from claim 27, which is patentable for at least the reasons set forth above.

**13.** Claim 48 currently stands rejected for allegedly being obvious in view of Kurane and U.S. Patent 5,695,934 to Brenner (hereinafter "Brenner").

It is respectfully submitted that the rejection of this claim is moot, since claim 48 depends directly from claim 27, which is patentable for at least the reasons set forth above.

For all the foregoing reasons, reconsideration and allowance of claims 27-51 and 54 is respectfully requested.

If a telephone interview could assist in the prosecution of this application, please call the undersigned attorney.

Respectfully submitted,

A handwritten signature in cursive script, reading "Patrick J. O'Shea", is written over a horizontal line.

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